

TABLE OF CONTENTS

- 1. SUMMARY**
- 2. DIFFERENTIAL PRESSURE (ΔP) READINGS**
- 3. EXHAUST SYSTEM INSPECTION**
- 4. DEMISTER CLEANING AND SERVICE**
- 5. NON-ROUTINE MAINTENANCE AND REPAIRS**
- 6. WATT METERS**
- 7. STACK TESTS**

ATTACHMENTS

- 1. ΔP READINGS LOG SHEET**
- 2. INSPECTION LOG**
- 3. DEMISTER CLEANING SCHEDULE LOG**
- 4. NON-ROUTINE LOG**
- 5. WATT METER LOG SHEET**
- 6. STACK TEST RESULTS**
- 7. CORRESPONDENCE WITH REGULATORY AGENCIES**

1. SUMMARY OF THE CONTROL SYSTEMS

Superior Plating Co. is a hard chrome and both electrolytic and electroless nickel plating job shop. In the hard chrome plating chromic acid mist is generated and is removed from the production areas by means of two exhaust systems:

- (1) 75HP 45,000 ACFM
- (2) 2-25HP 24,000 ACFM

These systems collect chromic acid mists at three locations:

- (1) at the plating tanks through a hood trap/collector where solution is pumped out on a weekly basis and recycled back to certain production tanks
- (2) sumps in the tunnel systems from condensation of the wet mist
note: this solution is pumped out and recycled off-site
- (3) prior to the stack there are polyethylene wire mesh demisters which capture most of the remaining mist before leaving the stack. Since these demisters are operated dry, they require periodic cleaning to prevent severe fouling. The frequency of this cleaning is based on production and preliminary stack test results which indicate that at least monthly changes should be performed.
(note: 3 month cleanings were performed on a routine basis and this will change ASAP).

2. DIFFERENTIAL PRESSURE (ΔP) READINGS

Each exhaust system has a magnahelix differential pressure gauge which are located in the boiler room. They are labeled control device #1 and #2. Typically we get 1.35" from the 75HP and 0.45" from the twin 25HP exhaust systems. Daily readings of these devices are recorded in log sheets (attachment #1). As the filter media (a.k.a. Otto York demisters) begin to foul, the readings of these gauges should increase since the demisters are filling up with chromic acid liquid which decreases the pore sizes of the openings that in turn cause the pressure across the control devices to increase. The demisters are removed and cleaned while a replacement set is installed.

3. EXHAUST SYSTEM INSPECTION

The present exhaust system requires the periodic inspection for leaks, vibration, equipment fatigue, and also the removal of concentrated chromic acid. The inspection is kept on a log (see attachment #2).

The solution that is recovered from the hood collectors is used as make-up solution for the porous pot chrome recycling operation. The solution recovered from condensate in the tunnels is recycled off-site. It is our goal to capture as much solution at the hoods (i.e. source reduction) as possible.

4. DEMISTER CLEANING SCHEDULE LOG

The Demisters that are in each control device are enclosed in titanium baskets and fitted such that there are no leaks around any seams.

The 2-25 HP blower system (aka STACK #2) has one 6" high layer of these and are 10.5 ft x 9 ft across.

The 75 HP blower system (aka STACK #3) has two 6" high layers of these that are 10 ft x 10 ft across and are installed in a criss-crossed fashion to increase the efficiency of the demisters.

Due to it being a dry system, the filters are removed when they become saturated with chromic acid and cleaned in the wastetreatment plant with the following procedure:

1. Soaked in a caustic cleansing solution (typically are spent caustic cleaner)
2. Thoroughly rinsed using a pressure washing device until most of the build -up is removed
3. They are neutralized in a dilute (2-10%) HCl acid solution
4. The demisters are thoroughly rinsed and allowed to dry
5. They are stored safely for their next use

The frequency of these cleanings are based on preliminary stack test results and production demands. The usual cleaning program was every three months, however we are instituting a more rigorous schedule of every two weeks to prevent them from becoming saturated (see attachment 3).

5. NON-ROUTINE MAINTENANCE AND REPAIRS

As the control equipment is repaired, a log of what service is performed is kept:
(see attachment #4).

6. WATT METERS

The watt meters are installed in the switchbox room and are in the process of being evaluated for its use in determining a quantitative means of scheduling the cleaning of the demisters. If this method is acceptable, a variable cleaning schedule will exist. However we will clean them on a bi-weekly basis until such procedures are implemented.

The watt meter readings will be kept on a log (see attachment #5).

7. STACK TESTS

All stack test records will be kept in this manual (see attachment #6). The limits for such test are: 0.015mg/dscm.

Superior will evaluate any stack test results and take appropriate action to ensure compliance.

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
5.21.98	8:00 A	0.62	0.42		Jwr
5.22.98	8:00 A	0.62	0.42		Jwr
5.26.98	7:45 A	0.64	0.42		Jwr
5.27.98	8:00 A	0.64	0.43		Jwr
5.28.98	8:00 A	0.64	0.43		Jwr
5.29.98	8:30 A	0.65	0.43		Jwr
6.1.98	8:30 A	0.65	0.42		Jwr
6.2.98	8:30 A	0.63	0.42		Jwr
6.3.98	8:30 A	0.65	0.42		Jwr
6.4.98	8:00 A	0.61	0.40		Jwr
6.5.98	8:30 A	0.69	0.0		Jwr
6.8.98	8:30 A	0.65	0.42		Jwr
6.9.98	8:30 A	0.65	0.42		Jwr
6.10.98	8:00 A	0.65	0.42		Jwr
6.11.98	8:00 A	0.66	0.43		Jwr
6.12.98	8:00 A	0.67	0.43		Jwr
6.15.98	8:30 A	0.66	0.42		Jwr

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
4.23.98	8:30A	0.61	0.40		Jwn
4.24.98	8:30A	0.60	0.40		Jwn
4.27.98	7:45A	0.60	0.40		Jwn
4.28.98	7:45A	0.60	0.40		Jwn
4.29.98	7:45A	0.60	0.40		Jwn
4.30.98	7:45A	0.62	0.42		Jwn
5.1.98	7:45A	0.65	0.45		Jwn
5.4.98	8:00A	0.61	0.41		Jwn
5.5.98	8:30A	0.65	0.45		Jwn
5.6.98	8:00A	0.64	0.43		Jwn
5.7.98	8:00A	0.64	0.43		Jwn
5.8.98	8:30A	0.62	0.42		Jwn
5.11.98	7:30A	0.61	0.41		Jwn
5.12.98	8:00A	0.61	0.41		Jwn
5.13.98	8:00A	0.61	0.41		Jwn
5.14.98	8:30A	0.61	0.41		Jwn
5.15.98	8:15A	0.62	0.42		Jwn
5.18.98	8:00A	0.63	0.41		Jwn
5.19.98	8:00A	0.63	0.42		Jwn
5.20.98	8:00A	0.62	0.42		Jwn

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
3.25.98	8:00A	0.61	0.46		Jwn
3.26.98	8:00A	0.61	0.46		Jwn
3.27.98	8:00A	0.65	0.49		Jwn
3.30.98	8:00A	0.65	0.49		Jwn
3.31.98	7:45A	0.62	0.49		Jwn
4.1.98	8:00A	0.62	0.45		Jwn
4.2.98	8:00A	0.62	0.45		Jwn
4.3.98	8:30A	0.62	0.47		Jwn
4.6.98	8:30A	0.60	0.40	CHANGE FILTER	Jwn
4.7.98	8:30A	0.60	0.40		Jwn
4.8.98	8:30A	0.59	0.40		Jwn
4.9.98	8:30A	0.60	0.40		Jwn
4.13.98	8:30A	0.61	0.40		Jwn
4-14-98	8:30A	0.60	0.40		R.D
4.15.98	8:30A	0.60	0.40		Jwn
4.16.98	8:30A	0.60	0.40		Jwn
4.17.98	8:30A	0.61	0.41		Jwn
4.20.98	8:30A	0.60	0.39		Jwn
4.20.98	8:30A	0.61	0.40		Jwn
4.22.98	8:30A	0.60	0.40		Jwn

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
2.25.98	8:00A	0.60	0.40		Jw
2.26.98	8:00A	0.60	0.40		Jw
2.26.98	8:00A	0.60	0.40		Jw
2.27.98	8:00A	0.60	0.40		Jw
3.2.98	8:00A	0.62	0.46	Filters cleaned + Second Set installed	Jw
3.3.98	8:00A	0.60	0.45		Jw
3.4.98	7:45A	0.60	0.45		Jw
3.5.98	8:15A	0.60	0.45		Jw
3.6.98	7:45A	0.60	0.45		Jw
3.9.98	8:00A	0.60	0.45		Jw
3.10.98	8:00A	0.60	0.45		Jw
3.11.98	8:00A	0.60	0.45		Jw
3.12.98	8:00A	0.60	0.45		Jw
3.13.98	8:00A	0.60	0.46		Jw
3.16.98	10:00A	0.62	0.47		Jw
3.17.98	8:00A	0.61	0.46		Jw
3.18.98	8:00A	0.60	0.45		Jw
3.19.98	8:00A	0.61	0.46		Jw
3.20.98	8:00A	0.60	0.46		Jw
3.23.98	8:00A	0.60	0.46		Jw

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
1.28.98	7:45A	0.62	0.40		Jwr
1.29.98	8:30A	0.61	0.39		Jwr
1.30.98	7:00A	0.61	0.39		Jwr
2.2.98	8:00A	0.61	0.40		Jwr
2.3.98	8:15A	0.61	0.40		Jwr
2.4.98	8:15A	0.61	0.40		Jwr
2.5.98	8:00P	0.60	0.38		Jwr
2.6.98	8:00A	0.60	0.39		Jwr
2.9.98	8:00P	0.62	0.40		Jwr
2.10.98	8:00P	0.62	0.39		Jwr
2.11.98	10:00A	0.62	0.40		RD
2.12.98	7:45A	0.63	0.40		Jwr
2.13.98	7:30A	0.62	0.39		Jwr
2.16.98	7:30A	0.65	0.40		Jwr
2.17.98	7:45A	0.65	0.40		Jwr
2.18.98	8:00A	0.64	0.39		Jwr
2.19.98	8:00A	0.62	0.39		Jwr
2.20.98	8:00A	0.62	0.40		Jwr
2.23.98	8:00A	0.61	0.40		Jwr
2.24.98	8:00A	0.60	0.39		Jwr

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
12-30-97	8:00 AM	0.61	0.45		R.D
12-31-97	8:00 AM	0.62	0.46		R.D
	Happy New Year				
1.5.98	7:30A	0.62	0.49		Jm
1.6.98	7:45A	0.62	0.46		Jm
1.7.98	7:45A	0.62	0.46		Jm
1.8.98	8:00A	0.62	0.46		Jm
1.9.98	8:00A	0.62	0.46		Jm
1.12.98	8:00A	0.61	0.46		Jm
1.13.98	8:00A	0.61	0.46		Jm
1.14.98	8:00A	0.61	0.46		Jm
1.15.98	8:15A	0.61	0.46		Jm
1.16.98	8:00A	0.61	0.45		Jm
1.19.98	8:00A	0.61	0.40		Jm
1.20.98	8:00A	0.61	0.40		Jm
1.21.98	8:00A	0.61	0.40		Jm
1.22.98	8:30A	0.61	0.39		Jm
1.23.98	8:30A	0.61	0.39		Jm
1.26.98	8:15A	0.62	0.40		Jm
1.27.98	7:00A	0.62	0.40		Jm

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
11.25	8:00A	1.69	0.47		Jwn
11.26	8:00A	1.65	0.46		Jwn
12.1	8:00A	1.68	0.46		Jwn
12.2	8:00	1.68	0.46		Jwn
12.3	8:00	1.68	0.46		Jwn
12.4	8:30	1.65	0.46		Jwn
12.5	8:00	1.65	0.46		Jwn
12.8	11:00	1.70	0.47		Jwn
12.9	8:00	1.70	0.47		Jwn
12.10	8:15	1.69	0.46		Jwn
12.11	10:30	1.69	0.47		Jwn
12.12	8:00	1.69	0.46		Jwn
12.15	8:00	1.70	0.46		Jwn
12.16	8:00	1.70	0.46		Jwn
12.17	8:00	1.70	0.46		Jwn
12.18	8:00	0.62	0.46		Jwn
12-19	8:00	0.63	0.46		R.D
12.22	8:00	0.62	0.46		Jwn
12.23	8:00	0.62	0.46		Jwn
12-29	8:00	0.62	0.46		R.D

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
10.28.97	8:15A	1.69	0.74		Jwn
10.29.97	8:15A	1.68	0.73		Jwn
10.30.97	8:00A	1.68	0.73		Jwn
10.31.97	8:15A	1.70	0.75		Jwn
11.3.97	8:00A	1.70	0.75		Jwn
11.4.97	8:00A	1.67	0.73		Jwn
11.5.97	7:45A	1.68	0.74		Jwn
11.6.97	8:00A	1.68	0.74		Jwn
11.7.97	8:00A	1.70	0.75		Jwn
11.10.97	8:15A	1.68	0.74		Jwn
11.11.97	8:00A	1.64	0.46	SWITCH TO OLD FILTERS	Jwn
11.12.97	7:45A	1.65	0.46		Jwn
11.13.97	7:45A	1.65	0.46		Jwn
11.14.97	8:15A	1.68	0.46		Jwn
11.17.97	8:00A	1.68	0.46		Jwn
11.18.97	8:00A	1.69	0.47		Jwn
11.19.97	8:00A	1.68	0.46		Jwn
11-20-97	9:00 AM	1.68	0.47		RD
11.21.97	8:00A	1.69	0.47		Jwn
11.24.97	8:00A	1.69	0.48		Jwn

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
9.30.97	8:00	1.65	0.75		Jwn
10.1.97	7:45	1.70	0.75		Jwn
10.2.97	8:00	1.65	0.72		Jwn
10.3.97	8:00	1.65	0.72		Jwn
10.6.97	8:00	1.70	0.75		Jwn
10.7.97	8:00	1.70	0.75		Jwn
10.8.97	8:00	1.71	0.75		Jwn
10.9.97	8:00	1.71	0.75		Jwn
10.10.97	8:00	1.71	0.75		Jwn
10.13.97	8:30	1.69	0.74		Jwn
10.14.97	8:00	1.70	0.75		Jwn
10.15.97	8:00	1.70	0.75		Jwn
10.16.97	8:00	1.70	0.75		Jwn
10.17.97	8:00	1.69	0.73		Jwn
10.20.97	8:00	1.70	0.75		Jwn
10.21.97	8:00	1.70	0.75		Jwn
10.22.97	8:30	1.65	0.73		Jwn
10.23.97	8:00	1.68	0.73		Jwn
10.24.97	8:15	1.68	0.74		Jwn
10.27.97	8:25	1.69	0.74		Jwn

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
9.2.97	8.00	1.65	0.75	STACK TESTING DONE FRIDAY 8/29	JWm
9.3.97	8.00	1.65	0.75		JWm
9.4.97	8.00	1.62	0.75		JWm
9.5.97	8.00	1.62	0.75		JWm
9.8.97	8.00	0.62	0.42	NEW FILTERS (Single layer in both)	JWm
9.9.97	8.00	1.25	0.47		JWm
9.10.97	8.00	0.62	0.47		JWm
9.11.97	8.00	0.65	0.47		JWm
9.12.97	9:00 A	0.65	0.47		R.D
9.15.97	8:00 A	0.65	0.47		JWm
9.16.97	8:00 A	0.63	0.47		JWm
9.17.97	8:00 A	0.63	0.47		JWm
9.18.97	8:00 A	0.65	0.47		JWm
9.19.97	8:30 A	0.65	0.47		JWm
9.22.97	8:00 A	1.68	0.73		JWm
9.23.97	7:45 A	1.65	0.75		JWm
9.24.97	7:45 A	1.60	0.73		JWm
9.25.97	8:00 A	1.65	0.75		JWm
9.26.97	7:45 A	1.65	0.75		JWm
9.29.97	7:45 A	1.70	0.75		JWm

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
8.1.97	8:30	0.45	1.42		Jwm
8.4.97	10:30	0.45	1.45		Jwm
8.5.97	8:30	0.45	1.45		Jwm
8.6.97	8:30	0.45	1.45		Jwm
8.7.97	10:00	0.45	1.45		Jwm
8.8.97	8:30	0.45	1.45		Jwm
8.11.97	8:00	0.50	1.45	BOTH BLOWERS CLEANED 9/9.	Jwm
8.12.97	8:30	0.50	1.45		Jwm
8.13.97	8:00	0.50	1.45		Jwm
8.14.97	8:00	0.50	1.45		Jwm
8.15.97	8:00	0.50	1.45		Jwm
8.18.97	8:00	0.45	1.40	FILTERS CLEANED ON WEEKEND	Jwm
8.19.97	8:00	0.42	1.45		Jwm
8.20.97	8:30	0.44	1.42		Jwm
8.21.97	8:00	0.44	1.42		Jwm
8.22.97	8:00	0.44	1.42		Jwm
8.25.97	8:00	0.44	0.65	SET OF FILTERS REMOVED FOR CLEANING	Jwm
8.26.97	8:00	0.44	0.64		Jwm
8.27.97	7:45	0.44	0.62		Jwm
8.28.97	8:00	0.44	1.40	SET OF FILTERS PUT BACK ON FIRST SET	Jwm
8.29.97	8:00	0.75	1.60		Jwm

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
7-3-97	7:30AM	0.44	1.38		Fun
7-7-97	8:15AM	0.45	1.48	Both sets of Rites changed 7-4-97	R.D
7-8-97	745AM	0.45	1.40		Fun
7-9-97	8:15AM	0.45	1.40		Fun
7-10-97	8:30A	0.45	1.40		Fun
7-11-97	9:00A	0.45	1.42		Fun
7-14-97	8:30A	0.45	1.40		Fun
7-15-97	8:30	0.45	1.42		Fun
7-15-97	8:00	0.45	1.42		Fun
7-17-97	8:15	0.45	1.42		Fun
7-18-97	8:30	0.45	1.40		Fun
7-21-97	8:30	0.45	1.45		Fun
7-22-97	8:00	0.45	1.42		Fun
7-23-97	8:30	0.45	1.42		Fun
7-24-97	8:30	0.45	1.42		Fun
7-25-97	8:30	0.45	1.42		Fun
7-28-97	8:30	0.45	1.42		Fun
7-29-97	8:30	0.45	1.42		Fun
7-30-97	8:30	0.45	1.42		Fun
7-31-97	8:30	0.45	1.42		Fun

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
6-5-97	7:30AM	0.42	1.40		Jm
6-6-97	7:30AM	0.42	1.40		Jm
6-9-97	7:45AM	0.20	1.40	only 1 25 HP motor on	Jm
6-10-97	7:45AM	0.20 [*] /0.45	1.40	Furn's on 8:15AM.	Jm
6-11-97	8:00AM	0.45	1.40		Jm
6-12-97	7:30AM	0.42	1.38		Jm
6-13-97	7:45AM	0.42	1.38		Jm
6-16-97	7:30AM	0.40	1.40		Jm
6-17-97	8:15AM	0.42	1.38		Jm
6-18-97	7:30AM	0.42	1.38		Jm
6-19-97	7:45AM	0.42	1.38		Jm
6-20-97	7:30AM	0.42	1.38		Jm
6-23-97	7:45AM	0.42	1.38		Jm
6-24-97	7:45AM	0.43	1.38		Jm
6-25-97	7:30AM	0.44	1.39		Jm
6-26-97	7:45AM	0.42	1.38		Jm
6-27-97	8:00AM	0.42	1.38		Jm
6-30-97	8:30AM	0.42	1.38		Jm
7-1-97	8:15AM	0.42	1.38		Jm
7-2-97	8:30AM	0.44	1.38		Jm

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
5-7-97	7:45 AM	0.15	1.35		Jw
5-8-97	8:15 AM	0.15	1.35		Jw
5-9-97	7:30 AM	0.15	1.35		Jw
5-12-97	7:45 AM	0.46	1.35	both 25 HP running (repairs completed)	Jw
5-13-97	7:45 AM	0.45	1.35		Jw
5-14-97	7:45 AM	0.45	1.35		Jw
5-15-97	7:30 AM	0.45	1.35		Jw
5-16-97	7:30 AM	0.46	1.35		Jw
5-19-97	7:30 AM	0.46	1.35		Jw
5-20-97	7:30 AM	0.46	1.35		Jw
5-21-97	7:45 AM	0.45	1.35		Jw
5-22-97	7:30 AM	0.45	1.35		Jw
5-23-97	7:45 AM	0.45	1.35		Jw
5-27-97	7:45 AM	0.42	1.35		Jw
5-28-97	7:45 AM	0.41	1.35		Jw
5-29-97	7:45 AM	0.42	1.38		Jw
5-30-97	7:30 AM	0.42	1.38		Jw
6-2-97	7:45 AM	0.45	1.40		Jw
6-3-97	8:30 AM	0.42	1.40		Jw
6-4-97	7:45 AM	0.42	1.40		Jw

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
4-9-97	7:15 Am	0.42	1.35		Fun
4-10-97	7:45 Am	0.42	1.35		Fun
4-11-97	7:15 Am	0.42	1.35		Fun
4-14-97	7:30 Am	0.44	1.32		Fun
4-15-97	7:15 Am	0.45	1.32		Fun
4-16-97	8:00 Am	0.45	1.32		Fun
4-17-97	8:00 Am	0.45	1.32		Fun
4-18-97	7:30 Am	0.44	1.33		Fun
4-21-97	7:30 Am	0.44	1.33		Fun
4-22-97	7:30 Am	0.44	1.33		Fun
4-23-97	7:30 Am	0.44	1.33		Fun
4-24-97	7:45 Am	0.47	1.37		Fun
4-25-97	7:30 Am	0.45	1.32		Fun
4-28-97	8:00 Am	0.44	1.32		R.D
4-29-97	7:45 Am	0.45	1.31		R.D
4-30-97	8:15 Am	0.45	1.32		R.D
5-1-97	8:00 Am	0.45	1.33		R.D
5-2-97	7:45 Am	0.44	1.31		R.D
5-5-97	7:15 Am	0.20	1.35	only 1-25HP motor running	Fun
5-6-97	7:30 Am	0.20	1.35	" "	Fun

AP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
3-11-97	7:30Am	0.42	1.20		Jun
3-12-97	7:15Am	0.40	1.20		Jun
3-13-97	7:30Am	0.42	1.20		Jun
3-14-97	7:45Am	0.42	1.20		Jun
3-17-97	7:30Am	0.40	1.19		Jun
3-18-97	7:15Am	0.38	1.20		Jun
3-19-97	7:30Am	0.42	1.20		Jun
3-20-97	7:45Am	0.42	1.20		Jun
3-21-97	7:30Am	0.42	1.20		Jun
3-24-97	7:15Am	0.42	1.22		Jun
3-25-97	7:45Am	0.42	1.38	75 HP stack cleaned and double layer of filters installed	R.D
3-26-97	7:45Am	0.42	1.35		Jun
3-27-97	7:30Am	0.42	1.35		Jun
3-31-97	8:00Am	0.42	1.35		Jun
4-1-97	8:00Am	0.42	1.35		Jun
4-2-97	7:45Am	0.45	1.35		Jun
4-3-97	7:15Am	0.42	1.35		Jun
4-4-97	7:15Am	0.42	1.35		Jun
4-7-97	7:45Am	0.42	1.35		Jun
4-8-97	7:45Am	0.42	1.35		Jun

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
2-11-97	7:45Am	0.42	1.20		Jm
2-12-97	7:45Am	0.42	1.20		Jm
2-13-97	7:30Am	0.44	1.21		Jm
2-14-97	7:30Am	0.42	1.20		Jm
2-17-97	8:00 Am	0.42	1.20		Jm
2-18-97	7:15Am	0.42	1.21		Jm
2-19-97	7:45Am	0.42	1.21		Jm
2-20-97	7:30Am	0.42	1.20		Jm
2-21-97	7:30Am	0.40	1.20		Jm
2-24-97	7:15Am	0.43	1.21		Jm
2-25-97	7:15Am	0.43	1.21		Jm
2-26-97	7:30Am	0.42	1.20		Jm
2-27-97	7:45Am	0.42	1.20		Jm
2-28-97	7:30Am	0.42	1.20		Jm
3-3-97	7:15Am	0.40	1.21		Jm
3-4-97	7:30Am	0.39	1.20		Jm
3-5-97	7:30Am	0.40	1.20		Jm
3-6-97	7:15Am	0.39	1.19		Jm
3-7-97	7:30Am	0.40	1.20		Jm
3-10-97	7:30Am	0.39	1.20		Jm

ΔP READINGS LOG SHEET

DATE	TIME	CD#1 ΔP	CD#2 ΔP	COMMENTS	INT
1-14-97	7:30 AM	0.42	1.20		Low
1-15-97	7:30 AM	0.42	1.19		Low
1-16-97	7:45 AM	0.39	1.19		Low
1-17-97	7:45 AM	0.41	1.19		Low
1-20-97	7:30 AM	0.40	1.19		Low
1-21-97	7:15 AM	0.40	1.19		Low
1-22-97	7:15 AM	0.40	1.19		Low
1-23-97	7:15 AM	0.40	1.19		Low
1-24-97	7:45 AM	0.41	1.19		Low
1-27-97	7:30 AM	0.42	1.21		Low
1-28-97	8:15 AM	0.39	1.20		Low
1-29-97	7:30 AM	0.42	1.20		Low
1-30-97	7:30 AM	0.42	1.19		Low
1-31-97	7:30 AM	0.42	1.20		Low
2-3-97	7:30 AM	0.40	1.20		Low
2-4-97	7:30 AM	0.42	1.20		Low
2-5-97	7:15 AM	0.42	1.20		Low
2-6-97	8:00 AM	0.42	1.20		Low
2-7-97	7:30 AM	0.42	1.20		Low
2-10-97	7:15 AM	0.42	1.21		Low

MONTHLY INSPECTION LOG

DATE 6-4-98 9 AM

INSPECTOR Richard Dunn

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

* on 6-5-98
found a crack in a water
line in tunnel. Tunnel
pumped out & pipe repaired

MONTHLY INSPECTION LOG

DATE 5-7-98

INSPECTOR Richard Durazo

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 4-3-98

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 3-5-98

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 2-6-98

INSPECTOR Richard Durazzo

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

(JAN) { Note: polypro 2" balls were added to all plating tanks except #18 to reduce emissions + evaporation loss. Has reduced hooz chrome + chrome in the tanks

MONTHLY INSPECTION LOG

DATE 1-7-98 1030AM

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE ^{11Am} 12-8-97

INSPECTOR Richard Durazzo

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 11-7-97 8:00 AM

INSPECTOR Richard Durazo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☒ no ☐
*pair of pants developed another leak. maint notified.
John B. to clean spot of apparent chime - cleaned 9 AM*
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 10-16-97 11Am

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
Note "pair of Pnts has been repaired"
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 9-11-97

INSPECTOR Rich Durzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 8-8-97

INSPECTOR Richard Duran

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☒ no ☐
75HP - pair of pent section, around some fittings was cleaned and needs to be repaired. (Notified Maint)
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 7-2-97

INSPECTOR Rich Durazzo

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 6-3-97

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 5-6-97

INSPECTOR Rich Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 4-9-97

INSPECTOR Rich Durazzo

CONTROL DEVICE #2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 3-3-97

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

MONTHLY INSPECTION LOG

DATE 2-3-97

INSPECTOR Richard Durazzo

CONTROL DEVICE # 2 (25 HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

CONTROL DEVICE #3 (75HP)

1. Is there any signs of leakage from the control device? yes ☐ no ☒
2. Is there any vibration which may cause damage to the equipment? yes ☐ no ☒
3. Are the fan motor and belts operating properly? yes ☒ no ☐
4. Is the stack structure corroding or degrading? yes ☐ no ☒

DUCT AND TUNNELS

1. Are there any signs of leakage from the ducts? yes ☐ no ☒
2. Is there any excessive solution in the tunnel sumps which may indicate a leak in the tunnel system? yes ☐ no ☒

25 Hp

7514P

[illegible]

NON-ROUTINE MAINTENANCE REPAIR LOG

List below any repairs to the control devices as they occur. Record the date, problem and the corrective action taken.

10-11-97 maint repaired (fiberglassed) a portion of the (Y) "pair of pants" section of the 75 HP exhaust system. There was a small separation of the steel which was causing a leak to occur especially when the system was turned on. We would remove the chrome that emitted with rags and caustic solution and waste treat the residue. ^{note:} As of 10-17-97 the problem appears to be fixed. Also this part of the system will be obsolete when the new exhaust system is installed.

11-8-97 maint Fiberglassed another section of the pair of pants, where chrome was leaking.

Note: Jan 1998 Add: polypro antipollution plastic balls to all Tanks except #18. Used solid ones in Stor. Tank (note: already had most of the surface area full but added more to cover any openings) and Bpvt. machine #37 and Colt #20, hollow balls went into all others. #18 presents a problem due to the work that they plate: Racks with parts on the clips get ~~knock~~ knocked off when the racks are removed from the tanks.

NON-ROUTINE MAINTENANCE REPAIR LOG

List below any repairs to the control devices as they occur. Record the date, problem and the corrective action taken.

5-5-97 - 5-9-97 repairs were made to a hinge on one of the 25HP motors.

8-9-97 Inspected the control devices prior to removing filters. Found no obvious source of leakage which would account to the high conc. of Cr in the previous (7/29) stack test.

When we changed the filters we modified the 75HP we put the old set of filters in the bottom with loose single ply material as a gasket sandwiched between each basket incl. the edges.

Then we put the good ("new") sets on top. The seal was so tight that we had a difficult time prying the 10th basket into the stack. This is the best seal we ever had and the goal now is to sample the air after one week.

8-23-97 Removed lower set of OTTO York Demisters from 75HP stack #3 as per Kimre; To prepare for Kimre Composite mesh pad style.

8-27-97 Installed a layer of Kimre Composite mesh pads to the top of the OTTO York Demisters as per Kimre Instructions (recommendations). Secured with 3" angle Irons

8-28-97 Same as above done to 25HP stack. Also secured 75HP filters (were lifting).